



Building BrushBot Kits

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TOOLS:

- [Scissors \(1\)](#)
- [Wire cutters/strippers \(1\)](#)



PARTS:

- [MAKE BrushBot Kit \(4-Pack\) \(1\)](#)
[includes: toothbrushes \(4\), micro vibrating motors with wire leads \(4\), coin cell batteries with wire leads \(4\), and double-sided foam tape squares \(2\)](#)

SUMMARY

Turn a toothbrush into a robot! BrushBots are easy and fun to build and race. The tiny vibrating motor turns the bristles into thousands of little legs, then they scoot like crazy bugs!

You can find all the parts you need to build 4 BrushBots in the MAKE BrushBot Kit — inspired by the original Bristlebot how-to from our friends at Evil Mad Scientist Laboratories.

Step 1 — Check the contents of your kit.



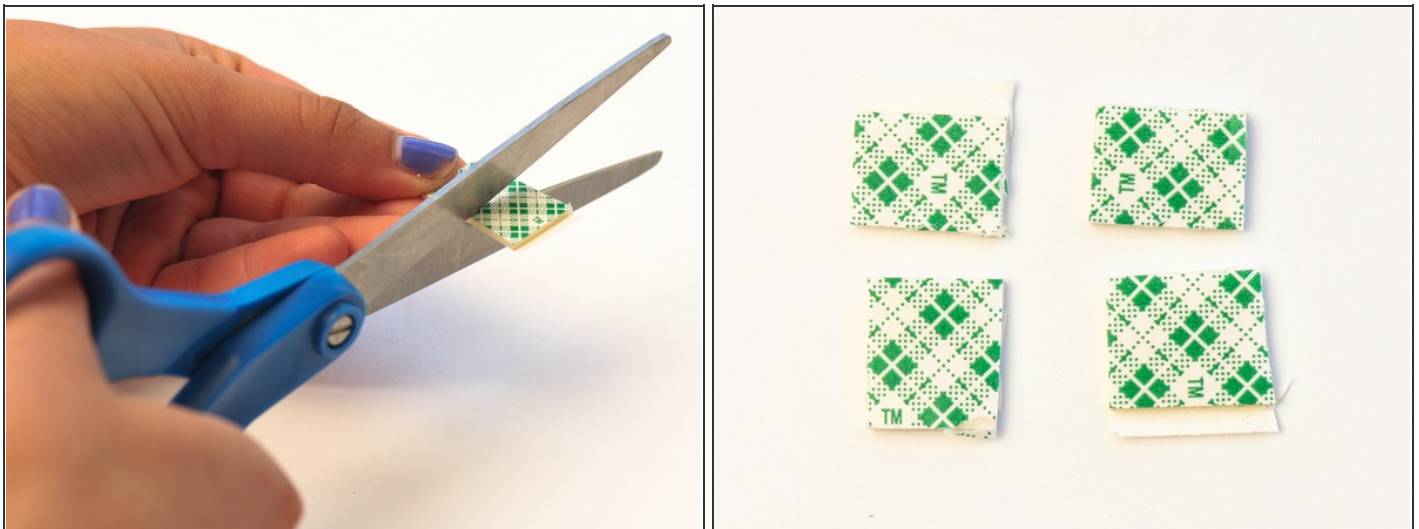
- You should have 4 toothbrushes, 4 tiny motors with wires attached, 4 batteries with wires attached, and 2 pieces of double-sided tape.

Step 2 — Cut the toothbrush.



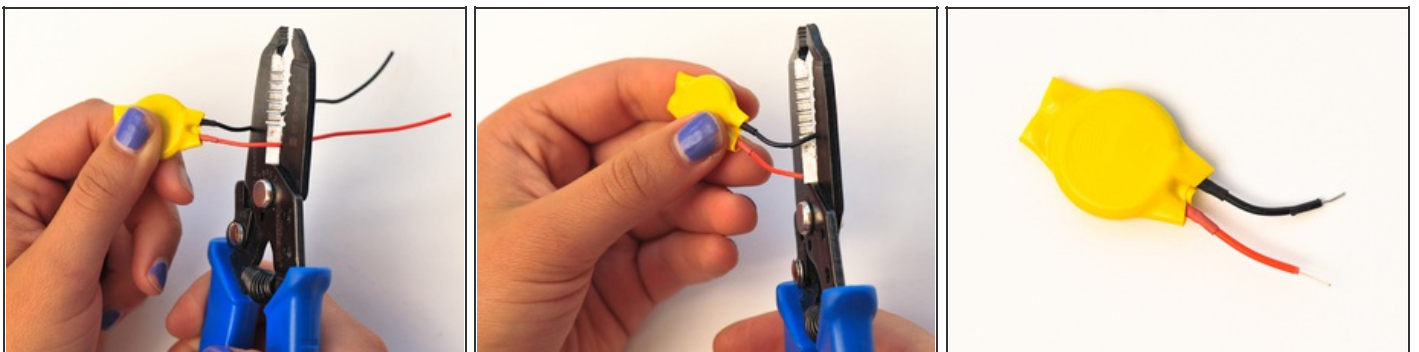
- Use strong scissors or diagonal cutters to cut the toothbrush head off the handle. Make sure to cut it close to the bristles, as shown here.

Step 3 — Cut the tape.



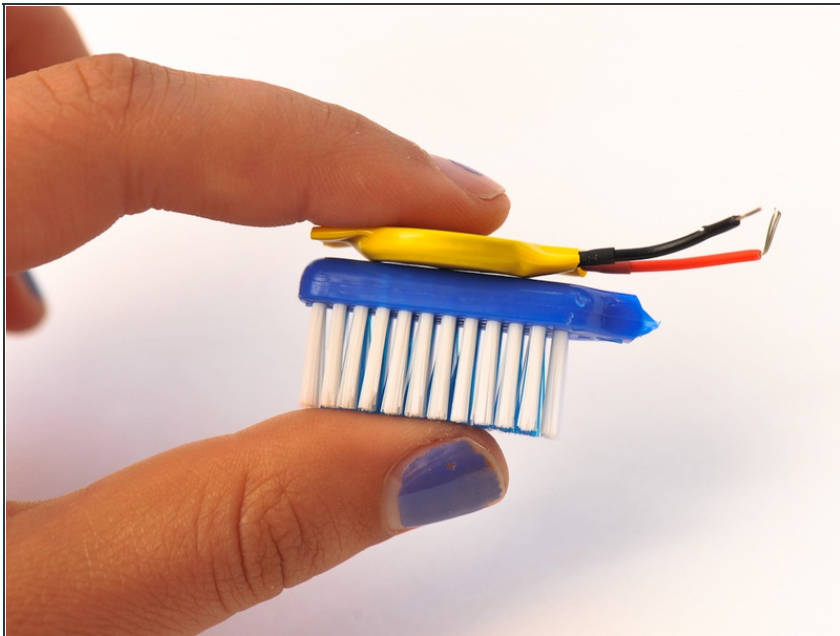
- Use scissors to cut one piece of double-sided foam tape into 4 smaller squares.

Step 4 — Trim the battery wires.



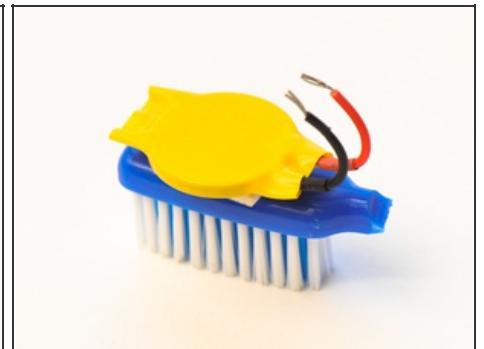
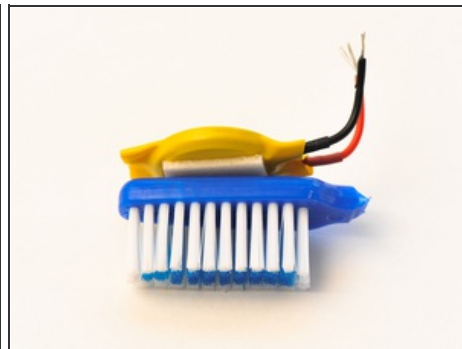
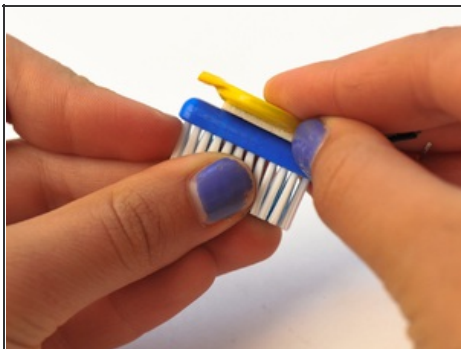
- Cut the battery wires about 1" long.
- Then use wire strippers to strip about 1/4" of insulation off the end of each wire.

Step 5 — Test-fit the battery.



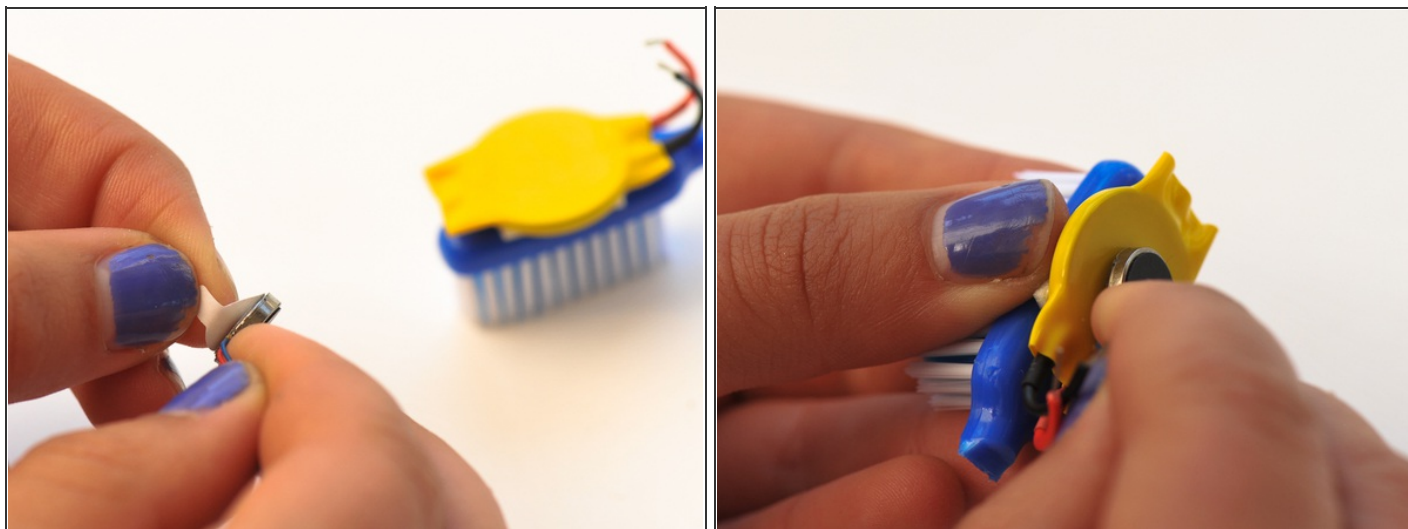
- The battery has a natural "curve" to it. This curve should be bent upward, to allow the battery to sit flat on the toothbrush.

Step 6 — Attach the battery.



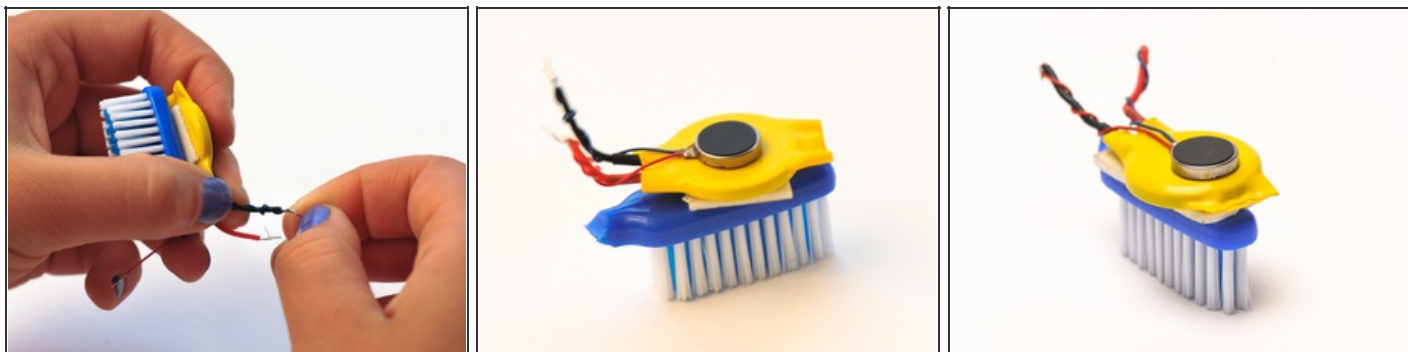
- Use a small square of double-sided foam tape to attach the battery to the toothbrush head.

Step 7 — Attach the vibrating motor.



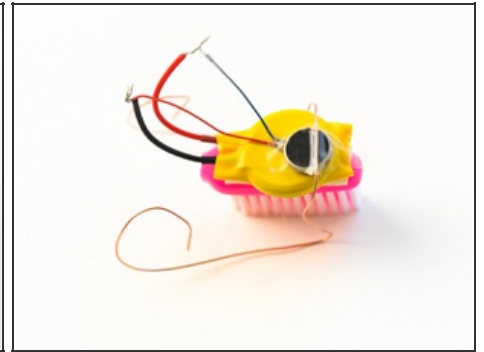
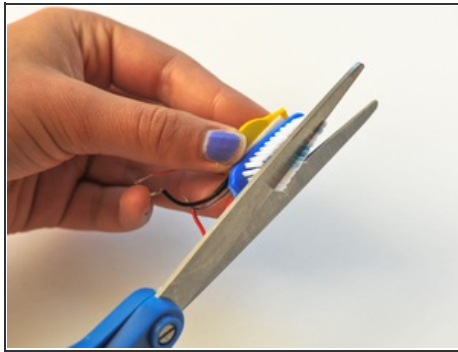
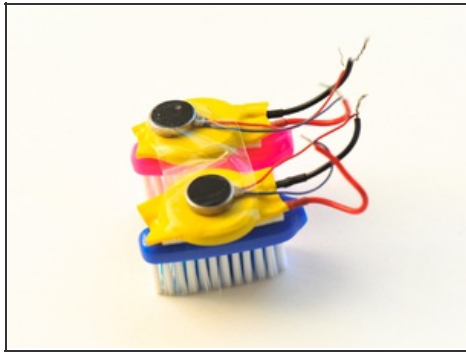
- Peel the sticker off the motor, and stick the motor firmly on top of the battery.

Step 8 — Twist the wires and go!



- When you're ready to run your BrushBot, twist each battery lead together with a motor lead to connect them. (The polarity doesn't matter, so you can twist black to black, or black to red.) Your BrushBot will start vibrating!
- Let go and watch it run around!

Step 9 — Modify your BrushBots (optional).



- After you build your BrushBots, mod them for more fun!
 - Connect 2 bots together with tape or a bit of wire.
 - Trim or bend the bristles to make the BrushBot change direction.
 - Add stabilizing wire legs. This way the BrushBots can crash into each other without tipping over.
 - Make up a racetrack and see whose BrushBot wins!

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